TURN BACK AT THE BORDER – AIRLIFT IMC OPERATIONS IN OPERATION ENDURING FREEDOM

GRADUATE RESEARCH PROJECT

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Abstract

This research answers the question, "Why weren't airlift instrument meteorological condition (IMC) procedures for key airlift nodes, Bagram and Khandahar, Afghanistan, established from the inception of Operation Enduring Freedom (OEF)?" It is a case study that uses historical data from a variety of sources, including interviews of key participants, and covers the time from crisis action planning just after 11 September 2001, until airlift instrument procedures for Afghanistan were approved in 2002. The project includes doctrinal examination relative to establishing instrument procedures that identifies potential gaps, provides insight into the process used, and describes how as one problem was solved, another would stand in its place. At first, combat operations took up large amounts of airspace, so no airspace was allocated for airlift IMC operations. Next, with no air traffic control facilities in Afghanistan, congested airspace required the continued use of visual aircraft separation. Finally, a credible threat, an increased flow of unpredictable IGO and NGO aircraft , undulating high terrain, challenging flight checks, and lengthy terminal approach procedures reviews all delayed instrument procedure implementation. The paper concludes with suggestions to improve future airlift operations.

Acknowledgments

I thank God, my family, and my true friends for their gifts. I thank this wonderful country of ours for the freedom to have a God, a family, and friends.

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TURN BACK AT THE BORDER – AIRLIFT IMC OPERATIONS IN OPERATION ENDURING FREEDOM

I. Introduction

> ***Rapid Global Mobility:***
> *The ability to rapidly establish an air-bridge and move military capability in support of operations* ***anywhere*** *in the world under* ***any conditions****. (emphasis added)*
>
> (The Edge – Air Force Transformation, 2003:10)

In late June of 1948, the Soviet Union in an attempt to gain control over the sectored German capital of Berlin, blockaded all ground routes into the city. The greatest airlift challenge of the times ensued to keep the city alive. Nearly two million people depended solely on airlift to keep them supplied. The city was still rebuilding after World War II and its peoples' needs were great. Each day, Berliners required an estimated 4,500 tons of food and coal to sustain life. As if the airlift's magnitude was not enough, "Germany's harsh winter constituted the single greatest threat to the airlift's transports" (Launius, 1998:40). The National Security Council of the United States even ceded, "the problems of flying during the harsh European winter seemed insurmountable" (Launius, 1998:34). Coalition casualties mounted to 70 as the airlift took its toll. The story does end well as the airlift system for Berlin, under the guidance of then Major General William H. Tunner, evolved to keep the flow of supplies going in spite of the weather. In fact, about half of the landings were under conditions requiring instrument

flight rules or *below* (Miller, R. 1998:4). In September of 1949, the Soviets lifted the blockade and allowed restoration of supply routes to Berlin.

Aircrews face a geographic blockade in a current era's airlift. The target city this time has no usable major roads, no ports, no rivers, and an adversary with different motivation than the Soviets' harassment in Berlin. A valley with high terrain in nearly every sector surrounds the city. As if these conditions aren't enough, poor weather often rears its ugly head. The airlift's year is not 1948; it is now, fifty-plus years after the Berlin Airlift. Advanced aircraft technology allows crews to be consistently certain of their position within about 10 meters using Global Positioning System (GPS) satellites without any ground based navigational aids. Crews are well trained to use onboard radars, taking them to 300 feet above ground level without visual reference or ground assistance. The aircraft can carry *two to eight times* the amount of weight the C-54 used in Berlin could, depending if it is a C-130 or a C-17. Every pilot has currency training to be able to penetrate weather and land under difficult conditions. Tactical airlift lessons from Berlin, Korea, Vietnam, Kosovo, and the Persian Gulf developed the force to its current state. Why then, did airlift crews at the beginning of Operation Enduring Freedom have to turn around at the Afghan border, if weather precluded maintaining visual separation of traffic all the way to interior airfields? In an environment where at least 95% of resupply came via airlift, weather was more effective than hostile action in interrupting needed airlift.

Background

Weather has always been a part of flying. From the earliest flights to current day, it is the given condition for which pilots plan, or *should* plan. Military operations in several conflicts have had to deal with the weather's impact. Reaching back to the China-Burma-India airlift in the last year of World War II, "The Hump," as it was known, operated in an environment lacking navigational facilities and communications where, "Weather conditions were virtually ignored" (Allman, 2003:22). In Berlin, instrument procedures were mandated by General Tunner and ground controlled approaches using radars with air traffic controllers, became the saving grace. When Korea flared up, airlift sorties flew through the weather to their objectives. The missions were difficult due to the fluid nature of the war and the lack of air traffic infrastructure. U.S. forces' experiences in Vietnam gave birth to advanced technologies in airdrop, like the adverse weather aerial delivery system and ground based radar positioning, to continue resupply missions in adverse weather. One of the most well known siege breaking airlifts was conducted at Khe Sanh using both technology and intestinal fortitude. Since the end of the Vietnam War, both aircraft navigation and crew training have advanced. In the Persian Gulf, American forces used GPS technology to combat a featureless desert and unexpected weather phenomenon to rout Saddam Hussein from Kuwait. Contingencies seem to come and go, but weather will not go away.

Industry is still trying out new ways of dealing with ever-present weather. Pilots are using artificial vision devices and instruments capable of seeing through weather to be able to fly in just about any obscurant that the aircraft can structurally withstand. Air

power is evolving through advanced hardware but technology is not cheap. As a result, huge fleets of airlifters, sporting the newest technology, will not likely populate the flight lines of the U.S. Air Force. 'Almost enough' seems to be the default value for fleet composition and is just a fact of life. Evolution of thought must replace vast fleets in the battle for scarce resources.

The entire U.S. military is undergoing transformation while it fights the global war on terrorism (GWOT). The campaign requires executing of military operations in all environments using rapidly deployable forces. These forces will move to places where the U.S. is not likely to have a forward presence. Past experience has shown that terrorists like to train in and inhabit, desolate, austere locations. Establishing the U.S. logistics train to these locations, in support of combat forces, is challenging and critical.

The Global Transportation Network has made great strides in establishing an effective airlift system covering the entire earth. Through training, this system is working better from fort to aerial port of embarkation (APOE). The enroute system from APOE to aerial port of disembarkation (APOD) is growing stronger through applying lessons from recent operations. Delivery of required assets from APOD to tactical assembly area or foxhole in theater is one of the critical parts of the whole supply chain. This segment faces unique forces compared to the other legs. Intratheater or tactical airlift, including direct delivery, must have a high rate of success or the whole supply chain suffers by requiring the use of methods to absorb system inefficiencies. Limited airlift assets, tight timelines for meshing deployed forces with their equipment, and a continuing military need for flexible mobility, tax the entire system. If inefficiency racks the whole chain, it adversely impacts the plan for using rapid deployment instead of

forward presence. Two core competencies described in *Air Force Vision 2020*, rapid global mobility and agile combat support, are directly impeded if weather is allowed to hamper operations (*AF Vision 2020*, 2000:4). This research focuses on just one part of the focused logistics concept by examining where the process of establishing a weather proof airlift supply chain into Afghanistan during Operation Enduring Freedom (OEF) fell short.

Research and Investigative Questions

The purpose of this research is to answer the question, "Why weren't airlift instrument meteorological condition (IMC) procedures for key airlift nodes, Bagram and Khandahar, Afghanistan, established from the inception of Operation Enduring Freedom (OEF)?" It is a case study that uses historical data from the establishment of command structures during the crisis action planning after 11 September 2001, until airlift instrument procedures for Afghanistan were approved in 2002. It is hypothesized that IMC airlift operations could have and should have been established much sooner. The following investigative questions were used to advance the logic flow toward answering the research question:

- What was the doctrinal process for establishing airlift IMC procedures in a theater?
- What were the key decision points during the process and who made them?
- What occurred or was absent in the process to establish IMC airlift operations leading up to OEF?

- What needs to be done to prevent future delays in establishing IMC operations for theater airlift?

Using a variety of sources, this paper identifies how the process broke down, resulting in the lack of airlift instrument procedures at the onset of OEF, and provides suggestions to improve future airlift operations. A significant level of documented information is available regarding the historical evolution of airlift operations in the weather, the crisis action planning process, the theater airspace allocation process, and air operations center structure. Interviews of key participants provide insight into the process used and why it is important to address this subject.

Impact on Mission

> *"For the first time in the history of war, this country has fought in a land-locked area where every single thing going in and coming out has gone by air. Food, water, ammunition, [and] troops were all transported by air, and that's really incredible."*
>
> Secretary of the Air Force Dr. James G. Roche
> 11 April 2002

It is important to examine this case study due to the direct influence it has on the current crew force executing global war on terrorism campaigns. Specific reasons for studying operations in Afghanistan include, they were unlike any previous effort in many categories, represent a bad case scenario, and have characteristics likely to be seen in future engagements. The lessons from this study are also directly related to developing Air Mobility Command's airfield opening doctrine and need to be addressed to fill a potential gap. The airfield opening concept is to make any airfield ready for instrument

flight operations in 72 hours from opening (TFEL, 2002:4). The focus is on airfield infrastructure, not airspace infrastructure.

C-130 crews expressed frustration when returning to base after they had to turn around at the Afghan border due to the lack of OEF weather procedures. Colonel John A. Tappan, the OEF Deputy Director of Mobility Forces from December 2001 through March 2002, captured the essence of the problem in an after action interview:

> When the weather started moving in, we received questions from the field, "What do we do about weather? The rules say this is a VFR flight [visual flight rules], not IMC [instrument meteorological conditions], because we're not under air traffic control. What do I do with weather?" We wrestled with that problem.
>
> General Findley's [Brigadier General Vern "Rusty" Findley, OEF DIRMOBFOR, January-April 2002] guidance was, "If the crews are not comfortable about flying in that type of environment, tell them to return to the base." The responsibility was with the aircraft commanders. That was all we could do.
>
> Although that was all we could do, I never thought it was the right thing to do. I felt that as the DIRMOBFOR and [the Combined Forces Air Component Commander's] right-hand man, we should be giving more guidance. But, the war was going on whether there was a cloud in the sky or not. We still had to get the cargo in and the casualties out. (Tappan, 2002)

Equally as frustrated, airlift users expressed distain for the lack of support they were receiving. At the C-130 Operation Iraqi Freedom (OIF) Lessons Learned conference hosted by the Air Mobility Command's Directorate of Operations, Tactics section (HQ AMC/DOK), the following excerpt identifies a carryover item from OEF:

> Current C-130 regulations require MAJCOM/DO or DIRMOBFOR approval for Airborne Radar Approaches (ARAs) under IMC [instrument meteorological conditions]. These procedures were never approved for IMC use in Iraq. ARAs were built for nearly every airfield in Iraq, but only authorized under VMC [visual meteorological conditions]. All flight in the Iraqi Coalition Operating Area (COA) operated under VFR [visual flight rules] see-and-avoid conditions.
>
> (McCullough, 2003:1)

OEF operations were exactly the same. Unincorporated lessons from Afghanistan resulted in error repetition in Iraq. The lack of approving an ARA into a given airfield is merely a symptom of a larger problem. The process chain of events leading to no ARAs in OIF can be backed all the way to no weather procedures being present at the inception of Operation Enduring Freedom. Creating an airlift system capable of handling adverse conditions from the initial planning stages is the optimal answer.

Even though Operation Iraqi Freedom happened after the case study time frame, many theater airlift crews participated in both operations. In both OEF and OIF, ground operations were characterized by great speed and required flexible mobility support. The high speed required for combating terrorists gives little room for delay or failure due to weather. Poor weather often hides the movement of adversaries, and countering them requires operations in it. Low cloud ceilings reduce the effectiveness of visually aimed and guided antiaircraft munitions. The tactical flexibility and concealment offered by the weather and night are advantages to the U.S. military. Exploiting strengths and limiting exposures to weaknesses, are keys for successful operations. This paper will take one step closer to achieving the goal of airlift reliability in the weather from the start of an operation. Hopefully, future doctrine and regulatory guidance will capture the concepts presented in this project.

II. Research Methodology

> *And tonight, a few miles from the damaged Pentagon, I have a message for our military: Be ready. I've called the Armed Forces to alert, and there is a reason. The hour is coming when America will act, and you will make us proud…We will not tire, we will not falter, and we will not fail.*
>
> President of the United States George W. Bush
> Address to Congress, 20 September 2001

The intent of this qualitative research is to explore, describe, and interpret the data surrounding, and then theorize why airlift instrument procedures were not established at the beginning of Operation Enduring Freedom. In essence, this research is to assure our readiness as charged by the President. The research presents the airspace planning and allocation process as described in doctrine and regulatory guidance at the time of the event. Information portraying the process actually used will then be compared and contrasted in the hopes of generalizing lessons for future application. The avenue of approach is holistic, context-bound, comes from personal views, and has unknown variables; all are elements in qualitative research. Information for the inductive analysis will come from small samples of observations, written documentation, and some interviews. The case study model was selected as the structure for this research. This chapter justifies its use.

Theoretical Model

Case Study.

As written by Robert Yin in his definitive book, *Case Study Research,* the case study is used in many situations to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena (Yin, 2003:1). Yin explains, "The distinctive need for case studies arises out of the desire to understand complex social phenomena" (Yin, 2003:2). The process of creating airlift instrument procedures for OEF lends itself to case study research due to the organizational aspect of decision making and the use of business processes.

Yin describes when to use each research strategy: experiment, survey, archival analysis, history, or case study. He bases the decision on how the following three characteristics are defined: "(a) the type of research question posed, (b) the extent of control an investigator has over actual behavioral events, and (c) the degree of focus on contemporary as opposed to historical events" (Yin, 2003:5). He wrote that if you needed to know 'how' or 'why' a particular program had worked (or not), you would lean toward either a case study or field experiment. Yin specifically states, "'How' and 'why' questions are likely to favor the use of case studies, experiments, or histories" (Yin, 2003:7).

The extent of the investigator's control over, and access to, actual behavioral events helps to distinguish among history, case study, and experiment. History and case study are closely aligned with one distinction; Yin prefers the case study when examining a contemporary event in which the relevant behaviors cannot be manipulated. Yin

elaborates, “The case study relies on many of the same techniques as a history, but adds two sources of evidence not usually included in the historian’s repertoire: direct observation of the events being studied and interviews of the persons involved in the events” (Yin, 2003:8).

The case study format was chosen since, “a ‘how’ or ‘why’ question is being asked about a contemporary set of events, over which the investigator has little or no control” (Yin, 2003:9). Additionally, the studied event is contemporary with participants available for interview. The case study method also allows covering contextual conditions which are pertinent to the study.

Single-Case Study Research Design.

This project uses the single-case research design to get from question to conclusion. In a single-case study, the goal is to expand and generalize theories so these theories can be applied in more situations (Yin, 2003:10). The analysis generalizes the factors causing delayed instrument procedures implementation in Afghanistan in order to determine how they can be mitigated in contemporary operations.

The five components of case study research design stressed by Yin are listed and given proper emphasis in the project:

1. a study’s questions
2. its propositions, if any
3. its unit(s) of analysis
4. the logic linking the data to the propositions
5. the criteria for interpreting the findings (Yin, 2003:21)

Specific questions logically linking the research to conclusions are guided as previously written by using “how” and “why” questions to a large extent. In this research, it is theorized that the factors surrounding the delayed implementation of weather procedures

into Afghanistan can be generalized and are important to mitigate in future operations. Bracketing the specific decision with time constraints helps to define the unit of analysis. In this project, the unit of analysis is defined as instrument procedures for tactical airlift operations in Afghanistan during the first months of Operation Enduring Freedom. The investigative questions posed by the research design help to find relevant evidence surrounding the phenomenon. They will link the data logically to the research question. The analysis will look at the context of the Afghan instrument tactical airlift, consider conclusions from past airlift operations to help define key decision points, and determine if the generalized factors would be valuable tools for aiding contemporary airlift operations.

Validity

According to Yin, four design quality conditions need to be maximized when using the case study approach: "(a) construct validity, (b) internal validity (for explanatory or causal case studies), (c) external validity, and (d) reliability" (Yin, 2003:19). Each condition is taken into consideration during research design and is discussed in turn, except internal validity since this case study is neither explanatory nor causal.

Construct Validity.

In accordance with Yin's structure, this case study will use multiple sources of evidence, and establish a chain of evidence during data collection to increase construct validity.

External Validity.

This case study is restricted to presenting analytical generalization of factors surrounding the effort to establish instrument procedures into Afghan airfields. The intent is to generalize the results into a broader theory which can then be applied and the theory tested for replication in future research. Case studies are, "generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a 'sample,' and in doing a case study your goal will be to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization)" (Yin, 2003:10). This project remains within these bounds.

Reliability.

By documenting the methodology of this case study, reliability is increased. The goal as Yin writes is to, "minimize errors and biases in a study" and to allow a later investigator to arrive at the same conclusions if the *same* case study is conducted. Reliability is boosted by strict adherence to the prescribed methodology and the following section, which addresses bias.

Potential Pitfalls/Known Biases

Some potential faults of case study research are a perceived lack of rigor, sloppy investigation, failing to follow systematic procedures, or allowing "equivocal evidence or biased views to influence the direction of the findings and conclusions" (Yin, 2003:10). Yin writes, "…bias also can enter into the conduct of experiments and the use of other

research strategies. In case study research, they may have been more frequently encountered and less frequently overcome" (Yin, 2003:10). Yin asserts that we have little way of testing for an investigator's ability to do good case studies and that the skills for doing them have not been defined. Researcher skill was a known problem in the conduct of this project. Strict adherence to Yin's structure helped mitigate this factor.

Some known biases were present in the researcher. The researcher was intimately familiar with aircrew procedures, OEF theater procedures, and had theories regarding the delayed inception of instrument procedures into Afghanistan. The U.S. Air Force Weapons School provided extensive experience to the researcher in the integration of air forces in a theater. This experience-centric view created a bias that can be likened to the Monday morning quarterback phenomenon. Additionally, a passion for tactical airlift and the belief that OEF airlift forces could have done much better, were insidious biases the researcher had to be aware of and attempted to counter during research.

Data Collection and Analysis

The intent of the data collection and analysis was to examine multiple sources to find out how instrument procedures for tactical airlift were established versus how doctrine calls for the process to work. Data was collected from official documents, first hand observations, and interviews of key participants. The official documents included theater plans, the operations order, airspace control plan, and special instructions. Key personnel were defined as those in positions inside the decision loop and subject matter experts. The collected data was then compared to the doctrinal template of theater airlift

instrument procedures. Specific data analysis included insight into the actual process used to plan for OEF airlift operations, where key decision points were missed, and possible solutions.

Interim Summary

This research is important from the perspective of potential impact on future theater airlift operations in the global war on terrorism. The case study is the best way to obtain and present the data surrounding the selected phenomenon. Former airlift efforts are presented to point out some key areas that were different for OEF theater airlift. This background information adds merit to the selection of the single-case study research method. Consistent with one of case study methodology's strengths, viewing a phenomenon in context with other events is important. Examining previous airlift struggles in the next section frames the study of airlift instrument procedures in Afghanistan.

III. Theater Airlift versus the Weather

It's déjà vu all over again.

Yogi Berra

The purpose of this chapter is to define the frame of reference for examining the lack of airlift instrument procedures at the inception of Operation Enduring Freedom. Examining previous successful airlift struggles places OEF in context and describe what was required for airlift to succeed versus the weather. On the surface, the Berlin Airlift had weather procedures from an early point and Operation Enduring Freedom had none, even though technology had advanced more than 50 years. Operation Enduring Freedom airlift operations were different in several areas than other airlift efforts, which are summarized throughout the chapter and tabulated in the conclusion. Since OEF was different, it is worthy to study for generalizations that may aid future airlift operations.

Historical Evolution

Studying previous conflicts revealed several categories of characteristics that enabled tactical airlift instrument procedures. These categories were examined for each historical area of responsibility selected to frame OEF's Afghanistan. Berlin, Korea, Vietnam, Desert Storm, and Kosovo were chosen to represent certain aspects of challenges facing airlift over time. A table at the end of the chapter includes the following studied qualities:

- Presence of prior air traffic control infrastructure
- Aircraft self-contained instrument approach navigation to ceilings of 500 feet and 1 mile of visibility
- Presence of non-cooperative airspace users
- Time compressed planning prior to execution
- Threat posed to airlift assets
- Presence of theater instrument condition airspace allocation process

Afghanistan's qualities in Operation Enduring Freedom are shown last to illustrate that it differed from previous experiences.

Berlin

The Berlin Airlift was the watershed event for airlift as an element of national power. Through the constructive rather than destructive use of airpower, escalated military action including the possible use of nuclear weapons was averted. Many of the airlift's experiences were carried forward.

Some critics may say that Berlin was so long ago as to be no longer valid. Simply put, the massive size, endurance, context, and success make it imperative to study. The huge numbers of aircraft involved had never before been put into a flow so close together with technology that was limited by today's standards. Major General William H. Tunner spearheaded the evolution of the aircraft control system. His experience in the China-Burma-India Theater during World War II placed him at the top of the air logistics heap. The Berlin Airlift system became the standard for airlift structure. It is the textbook example of efficient airlift flow in adverse weather conditions on the terminal leg of the supply chain.

Berlin had an airlift need for about 4500 tons of coal and food a day. This created a tremendous airflow problem. To put it in perspective, the average aircraft involved in the airlift was the C-47 or similar. These aircraft could haul, at most, 3 tons. Larger aircraft like the C-54 were used less but could carry up to 10 tons. In order to meet the 4500 ton requirement, various aircraft type needed to fly about 500 aircraft missions, on a perfect day, with aircraft loaded to the maximum. "With airplanes from three nations involved and much flying done at night or under conditions of reduced visibility, the need for some kind of standard rules and flight patterns in the air routes was readily apparent. …The Allies approved an agreement defining these [three] corridors on November 30, 1945" (Miller, R., 1998:3-4). A precise flow plan evolved that used exact instrument procedures, executed without variance. Roger Miller, in *To Save A City: The Berlin Airlift 1948-1949*, writes, "Tunner's approach required the careful coordination of every aspect of the airlift, including detailed procedures and exact duplication and precise execution of each phase of the operation from the on-load to the return landing" (Miller, R., 1998:47).

The Airlift Task Force Operations Monitoring Control Center established a rigid set of procedures for traffic control (Miller, R., 1998:20). These procedures were mandatory; General Tunner held the crews directly responsible for adherence by executing a policy of no tolerance for deviation. This philosophy was paramount to the airlift's success. The rigid airlift system is important to understand as its basic premises have been used again. Figure 1 shows the construct of the corridor system. Three

Figure 1 Berlin Corridor System (Miller, R., 1998:5)

corridors were used with the southern and northern for ingress and the central for egress. Each corridor was established using existing navigational aids. The corridors took care of lateral aircraft separation. Vertical separation was handled through altitude assignments and specifically designed descent profiles. Separating aircraft by time completed the effort for procedural deconfliction of aircraft. Roger Miller, a historian with the Air Force History and Museums Program, noted that ground controlled approach

(GCA) was instrumental in the safe execution of the Berlin Airlift. He wrote that GCA was, "probably the most important single technical factor in the success" (Miller, R., 1998:65). General Tunner spent a great deal of time and effort to acquire the radar, communication hardware, and operators for the whole air traffic control network, to include ground controlled approach assets. The corridor process worked well and hostile actions never halted the airflow. Crews met Soviet resistance, but even with "all these acts of harassment, no aircraft was shot down during the operation. That would have started a war, and the Soviets did not want that" (*Flying the Corridors*, 2003:n.pag.). With the successful Berlin Airlift in the books, General Tunner went on to work in Korea.

Korea

Tactical airlift in Korea was characterized by a wide variety of mission types, covering a variety of objective areas, including some austere locations and runways in poor condition. From 25 June 1950, when the North Korean Communists invaded, until the first airlift missions were flown, was a scant 3 days. It can be assumed that prior planning was scarce at best, and history backs the claim. As the need for airlift increased, more aircraft were assigned and with them came a need for central control. General Tunner led the Combat Cargo Command, the agency placed in charge. During operations to Kimpo airfield, Tunner's chosen airlift terminal, transports flew "an elongated route rather than across Korea to avoid enemy problems or interference with combat operations" (Miller, C., 1988:197). Long sortie durations of 7 hours were the norm for

flights into Kimpo. The heavy aircraft flow needed managing, so General Tunner "turned it into another Berlin airlift" and mandated that all flights follow instrument flying rules (Miller, C., 1988:198). General Tunner even had lights and GCA installed for the operation. Kimpo, though significant, was not really the norm for all tactical airlift operations.

It is evident with the study of the Korean War that conditions changed constantly with the movement of forces up and down the peninsula. The nature of the fighting rendered the instrument flying infrastructure either unreliable or inoperative, requiring the use of mostly visual flight rules. As an illustration, the 1st Marine Division was cutoff at Chosin Reservoir with no suitable airfields nearby. The decision was made to resupply the Marines via airdrop then land at "Hagaru-ri -- a rough, narrow, dirt strip 2,300 feet long," when able, to extract the forces (Miller, C., 1988:198). Chosin type missions occurred at other times, requiring operations into austere airfields with no instrument approach capabilities. The fluid ground situation promised little to no ground support in forward areas, and made just about every call for airlift an "emergency request" (Y'Blood 1997:49). The urgency of the requests led to increased crew creativity and boldness in their quest to accomplish the missions. Added to the urgency of the ground situation, the threat to airlift forces was real with accurate fire destroying many transports. Hostile fire consisted of mostly antiaircraft artillery, small arms, and the occasional fighter aircraft. After Korea, Asia provided many more opportunities for tactical airlift to evolve. Operations in Vietnam served to advance airlift techniques.

Vietnam

The Vietnam War covered a long period of time for the United States, from about 1954 through 1974, and involved varying levels of commitment. Giving overarching generalities for the conduct of tactical airlift instrument procedures in the conflict is difficult due to the war's duration and airlift's evolution. However, examples are used to highlight the key qualities.

Early in the war, American pilots and Vietnamese pilots who flew transports together flew differently. Ray Bowers, a noted Air Force historian, wrote the book *Tactical Airlift*, as part of the study of the U.S. Air Force in Southeast Asia. Bowers described the cultural rift:

> Flying by instruments became second nature for most American pilots, and rigid adherence to the procedures prescribed by instrument-flying rules and flying safety regulations became automatic. All this was wholly different from the flying techniques encountered by the Americans assigned to the VNAF [Vietnamese Air Force] transport group. The Vietnamese never attempted an instrument approach if they could make a visual one. Upon reaching the vicinity of their destination, Vietnamese pilots invariably sought the slightest break in a cloud cover, making a tight downward spiral to get underneath the overcast for a visual landing (Bowers, 1983:70).

According to Bowers, the Americans soon adopted similar practices and deemed them safer, "given the unreliability of most radio approach aids, the absence of heavy air traffic, and the experience and training of the Vietnamese in this way of flying" (Bowers, 1983:70). As American involvement escalated through about 1961, the airspace evolved with emphasis placed on gradually developing a route structure and all-weather capability as the aircrews became more familiar with conditions (Bowers, 1983:86). By 1968, many airlift hubs had excellent radar control facilities, "which assured traffic separation

and safe navigation during takeoff and landing" (Bowers, 1983:367). Additionally, when the Lockheed C-130 came in country, it included increased navigational capability. The aircraft radar, APN-59, was able to be used as an effective navigational device which could "clearly show the hills on either side of the valley floor" as it flew into an airfield (Bowers, 1983:338). Crews relied on the radar and crew interaction to navigate through the weather and terrain to accomplish their mission.

One classic event worth mentioning is the Khe Sanh campaign in 1968, as presented by Bowers. Marines were ordered to hold a fire base situated precariously in a deep valley. Resupply was only possible via airlift. The enemy was present all around the base and directed automatic weapons fire against transports. Indeed, "hostile small-arms fire could be encountered anywhere in Vietnam" (Bowers, 1983:73). Fortunately, the Marines had a ground controlled approach unit installed that could get an aircraft down in 500 foot ceilings and 2 miles of visibility (Bowers, 1983:299). The GCA unit worked well, until it was damaged by hostile fire, reducing airlift sorties to a quarter what they were previously. Many crews were decorated for their tenacious resupply efforts through antiaircraft fire and poor weather, even in the absence of the GCA radar. The airspace got crowded when the weather opened up due to the use of strike aircraft to cover the resupply efforts. The Marine station at Khe Sanh used their GCA radar unit to control a transport corridor system, put in place to handle the increased air traffic (Bowers, 1983:313). Air strikes helped break the resolve of the North Vietnamese forces as the Marines boldly held out.

In early 1972, Air Force leadership in Vietnam made a push for aircrews to "trust the civil air traffic control system and to use instrument flight procedures when flying in

clouds and in darkness, thus getting away from informal practices of the past" (Bowers, 1983:475). Most pilots felt that since many other aircraft were not using the same procedures this would not assure clearances from them (Bowers, 1983:475). Inter-service airspace coordination, as alluded to in the previous passage, was a bit slow in the planning stages. Bower points out that "three serious operating problems defied effective solution, all requiring better coordination between Army and the Air Force in the field" (Bowers, 1983:475). The two most applicable to this study are the high potential for midair collisions near forward bases and friendly artillery avoidance. These problems led to growth of all parties, at the time, for better coordination between airlift suppliers and airlift users. Nearly twenty years passed between Vietnam and Desert Storm, during which time, most Vietnam airlift veterans had separated or were retiring from the service. Some of the methods for traffic deconfliction left with them. Tactical airlift C-130s were shifted from the combat focused Tactical Air Command, to the more strategic-minded Military Airlift Command in 1974 to "more efficiently manage peacetime usage of the C-130s" (Tirpak, 1998:n pag). World events through the 1980s and the Cold War, illustrate that not everyone got the "at peace" message. Iraq definitely did not.

Desert Storm

Post-Desert Storm studies looked for lessons to forward on to future operations. One such study, commissioned by the Air Force, reviewed the use of air power in the removal of Iraqi forces from Kuwait in 1991. The study, titled *Gulf War Air Power Survey* (GWAPS), included mobility issues and stated the "basic planning for intratheater

distribution was marginal. … It did not cope with the significant and continued cascading requirements, which ultimately led to a doubling of the force structure in the theater" (GWAPS3, 1993:6). The result was a massive intratheater airlift effort in the middle of all of the other air related activity. GWAPS described the congestion, "Pre-Desert Shield plans, however, did not accurately forecast the tremendous volume of [total] air traffic, which threatened to overwhelm the ability of the existing route structure to handle it" (GWAPS1, 1993:125). To counter the crowded airspace, U.S. Central Command (USCENTCOM) planned to insert American controllers and equipment. The Saudis agreed to the concept, but required that the airspace plan "support the Saudi civil air traffic control process without supplanting it" (GWAPS1, 1993:119). The support came in the form of, "161 controllers at U.S. facilities, 85 U.S. controllers augmenting host nation controllers, 60 controllers in the liaison function, and 14 controllers on the CENTAF [U.S. Central Command Air Forces] staff to help manage combat airspace" (GWAPS1, 1993:125). The Saudi interaction requirement complicated General Schwarzkopf's plan to keep both XVIII Corps and VII Corps in their base camps until they were airlifted into position for their primary missions. The Gulf War Air Power Survey recapped the tactical airlift effort in the following manner:

> [A]fter the air campaign started, tactical airlift forces were called on to airlift the entire XVIII Airborne Corps from King Fahd and nearby bases to Rafha, a distance of over 400 miles. The original plan called for seventy-two aircraft, with one aircraft landing at Rafha every ten minutes, twenty-four hours a day for fourteen days – a flow of over 2,000 sorties. In actuality, the flow into Rafha averaged one landing every seven minutes for the first thirteen days of the move; 14,000 personnel and over 9,000 tons of equipment were transported. The C-130 fleet utilization rate for this period was 8.0–twice the planned wartime rate. (GWAPS3, 1993:158-159)

Conducting the airlift without communications complicated the effort and increased host nation coordination difficulties (AFDD2-6, 1999:38). As the Rafha example represents, most of the airlift flights were in friendly territory with limited numbers of missions into hostile territory. Those that went forward did not interfere with air combat operations.

Mechanisms present to ease coordination with other airspace users, like combat air forces, indicated that airlift integration into theater air operations had evolved and some of the coordination lessons from Vietnam had transferred into doctrine. A segment from the *Gulf War Air Power Survey*, illustrated the progression in attitude:

> Integration is always important, and the C-130s practiced with fighters, tankers, helicopters, Coalition aircraft, the E-3 Airborne Warning and Control System (AWACS), and the EC-130E Airborne Battlefield Command and Control Center (ABCCC) to perfect operational procedures. Airspace control with a concern for the potential threat of a midair collision constituted one of the greatest challenges for the COMALF [Commander of Airlift Forces] and CENTAF operational staffs. In the long run, safe airspace control turned out to be one of many major accomplishments by the CENTAF staff. (GWAPS3, 1993:158)

In the spirit of integration, an agency assigned to the Commander of Airlift Forces was directly responsible for airlift airspace procurement. The Combat Operations Division coordinated immediate airlift requests, coordinated airfield and airspace issues with the Airlift Operations Division and Command and Control Division, and managed "planned tactical events" (GWAPS3, 1993:172). Tactical airlift events could have included C-130 adverse weather aerial delivery system use. The system not only allows airdrops with no visual reference to the ground, but also enables the crew to use a self-contained radar-based approach to 300 feet above the ground in one mile visibility (AFI11-2C-130V3, 2000:140). Since the ground war only lasted one-hundred hours, tactical airlifters simply did not have to establish long-term resupply efforts in Iraqi defended areas or really battle

the weather. Thus, in Desert Storm, the six month spool-up time allowed an airspace system to be built on top of an existing Saudi structure, but the short duration never really put the airlift instrument airspace allocation process to the test in forward areas. Airlift was poised for an integrated effort with the other theater participants through pre-execution training. After the direct military action came to a close, years of support for Iraqi no-fly areas continued. The next challenge waited in the Balkans.

Kosovo

Operation Allied Force's intent was to force the Yugoslavian elected president, Slobodan Milosevic, to compel Serbian troops to stop the genocide of ethnic Albanians in the province of Kosovo. Air operations were the chosen course of action. To counter the air assault, the enemy had at its disposal, radar-guided and infrared surface-to-air missiles, fired from fixed sites or from man-portable systems, antiaircraft artillery, and initially, air to air fighters (Lambeth, 2001:17). The enemy's intent was to stop the air offensive. During the humanitarian airlift operations, the enemy's intent was less clear. This section addresses the airspace conditions over the Balkans as related to airlift.

Operations in Kosovo were supposed to be short lived, and the North Atlantic Treaty Organization expected that, "the bombing would be over quickly" (Lambeth, 2001:14). The operations extended to 78 days for the air war portion and longer for airlifters. It was difficult to conduct airlift operations in the resulting environment. Major Rolanda Burnett, a student in the School of Advanced Airpower Studies, wrote "[Operation Allied Force] inherited [Operation] Deliberate Forge's airspace plan, which

was designed for much smaller operations. As the operations increased, the utility of that airspace plan decreased" (Burnett, 2002:60). As it became evident that the conflict would be longer in duration, some changes to the original airspace plan had to be made. Air Force Doctrine Document 2-1.7, *Airspace Control in the Combat Zone*, included an excerpt from a Headquarters Air Force study, *The Air War Over Serbia: Aerospace Power in Operation Allied Force*, that showed the expected impact Kosovo airspace issues on future operations. The study characterized the airspace control plan (ACP) at the onset of Kosovo operations as a "contributor to numerous near mid-air collisions" for several reasons:

> As *Allied Force* grew, the ACP rapidly became obsolete, and commanders did not augment the airspace management team with sufficient, qualified, airspace planners to keep pace.
>
> The ACP depended on procedural control, thus it relied on pilots to maintain visual separation and radar to separate them from conflicting traffic. Notably, the airspace plan restricted air-refueling to visual conditions only. However, pilots often conducted air-refueling operations in the weather, without defining instrument procedures for aircraft separation and control. Control and reporting centers and their elements, mobile battle management and radar units subordinate to an AOC [Air Operations Center], have the mission of airspace management. Most of the mobile centers did not deploy to the war until April, and some set up at sites not ideally positioned to provide optimum coverage. Also, the CAOC [Combined Air Operations Center] was reluctant to transfer airspace management to the control and reporting centers after they were operational. Rather, the CAOC continued to depend on surveillance aircraft such as the Airborne Warning and Control System (AWACS) and NATO's airborne early warning aircraft. However, AWACS was heavily saturated with their primary mission of battle management, and the NATO aircraft are neither equipped nor trained for air traffic control.
>
> The airspace was dangerously crowded until the U.S. negotiated more space. Pilots and controllers filed 17 hazardous air traffic reports between 24 March and 1 May 1999. Although the air war started on 24 March, the CAOC used the peacetime airspace control plan until 1 May, when it activated an ACP designed for combat operations. Thereafter, the situation improved, and the number of hazards reported in *Allied Force* airspace dwindled. (AFDD2-1.7, 2001: 11)

Facing already crowded airspace was only part of the problem for airlifters as they tried to integrate with the combat air forces, which were controlled by the Joint Forces Air Component Commander. The command structure hampered efforts for getting needed airspace to achieve objectives. Lieutenant Colonel Rowayne A. Schatz presented his views on the matter from the perspective of a C-130 squadron commander directly involved in the operation in, "Theater Airlift Lessons from Kosovo." Schatz writes:

> The airlift system worked and got the job done, but not without problems. Coordination between airlift planners at Ramstein and the combat air force planners in the CAOC at Vicenza was difficult throughout the operation over Kosovo. For example, airspace planners in the CAOC took all airspace away from airlift missions during the first week of war. This stopped all airlift into Bosnia, and created problems with commercial carriers and other NATO countries. In the opinion of more than one airlift planner in the RAMCC [Regional Air Movement Control Center], fighter planners just did not understand or care about airlift airspace operational requirements. Airlift planners—particularly weapons officers whose expertise proved invaluable—had to force their way into the airspace management and ATO [air tasking order] generation processes in the CAOC to ensure airlift missions were integrated with the combat air forces.
>
> Another lesson learned was the need for airlift and tanker planners in each division of the CAOC, cross-matrixed into the strategy, planning, and combat operations divisions to ensure the airlift and air refueling efforts are properly coordinated in the theater air campaign plan and ATO. The primary airlift planning effort should be separated from the CAOC combat air forces planning effort because it is more of a logistics function, but airlift expertise needs to be built into the CAOC structure for orchestration with the combat air force effort. (Schatz)

One issue not addressed in the Kosovo operation lessons, was the adverse weather aerial delivery system. Some C-130s assigned to the theater were capable of flying airborne radar approaches, in the weather, with no need for navigational aids, to 300 feet

above the ground with one mile visibility. Most airlift locations had sufficient navigational aids, so the capability was not needed.

To sum up airlift instrument operations in Kosovo, it can be asserted that overall the operations were successful in the uncertain threat environment faced by the aircrews. Although present, instrument self-contained approaches by airlift aircraft were not required. It must be said that the coordination effort required to obtain needed airspace was monumental due to the lack of mobility presence in the combined air operations center. Since Operation Allied Force was placed on top of Operation Joint Endeavor, most of the airspace infrastructure was already in place, but needed expansion.

Operation Enduring Freedom: Afghanistan

Operation Enduring Freedom airlift operations were different from previous ones, making this case study worth the effort. In OEF, airlift aircraft and aircrew capabilities were about the same as in Desert Storm and Kosovo, but the planning and operating environments were significantly different. This section identifies the differences and sets the stage for the next two chapters. The following chapters conduct a careful examination of the existing doctrinal guidance and the process used for allocating instrument airspace for airlift in Afghanistan.

The events of September 11, 2001 initiated the Global War on Terrorism. Al Qaida operatives attacked American soil prompting a rapid response. Only 26 days elapsed from the time of the attacks, until the first American combat operations commenced. In comparison, 166 days elapsed from the Iraqi invasion of Kuwait until

coalition forces pushed through the Saudi Arabian-Kuwaiti border. This highlighted the reduction in planning time. Unlike previous conflicts, except for Korea, planners had little time to construct an air campaign plan and then execute it. The time compression required the use of less thorough planning, as no off-of-the-shelf plan addressed the stated mission to "destroy the Taliban as a haven for terrorist networks with global reach and to eliminate the Al Qaida network itself" (Operation Enduring Freedom Significant…, 2003:n pag). Airspace coordination was adversely affected in the time crunch and is addressed fully in chapter five.

The unique operating environment amplified the effects of the short spool-up time. Gordon Trowbridge is an *Air Force Times* author who covered many aspects of the air operations in Afghanistan. He wrote, "Never before has an airlift moved so much materiel and personnel under the constant threat of attack" (Trowbridge 2002: n pag). Secretary of the Air Force, Dr. James G. Roche backed Trowbridge's sentiment in an article by the Air Mobility Command Public Affairs office:

> "For the first time in the history of war this country has fought in a land-locked area where every single thing going in and coming out has gone by air," he said. "Food, water, ammunition, troops were all transported by air, and that's really quite incredible." (Leas, 2002: n pag)

With such a heavy reliance on airlift to support operations, the need for a robust flow plan may seem inherently obvious. Many operational characteristics hindered system construction.

Navy Captain Nicholas Cheston, the senior Crisis Action Team chief at U.S. Transportation Command, captured the essence of Afghanistan's infrastructure when he was interviewed by Trowbridge. Captain Cheston described Afghanistan:

> …somewhat charitably, as a nation with 'immature infrastructure.' 'It was not real robust even before we started dropping bombs,' he said. The utter lack of navigational aids, high-quality runways and cargo facilities, fueling and other equipment — even space to park airplanes — meant an airlift operation unlike any other. 'Getting over there was relatively easy,' Cheston said. 'Getting in there was hard.' (Trowbridge, 2002: n pag).

Afghanistan was a country wrecked by twenty years of war. The Taliban came to power in the vacuum left after the United States stopped supporting and Soviet Union pulled out of the region. Navigational aids and air traffic control were not high on the Taliban's expenditure list.

Tribal alliances outside of Taliban control were scattered all around the country. The unsettled socio-political environment made Afghanistan unstable. As a result, no clear, doctrinally segmented, battlefield was laid out in which to operate. The report covering the fratricide of coalition ground forces near Khandahar, Afghanistan asserted:

> [A]l-Qaida and Taliban forces disbursed in small units throughout Afghanistan, particularly in the mountain and border regions. As a result, traditional battle lines have not formed, with hostile forces spread throughout the country, widely interspersed with coalition and friendly Afghan ground forces. (Tarnak Farms, 2002: n pag).

The lack of clear battle lines did not mean there was no threat to operations. Retired General Walter Kross, a former commander of Air Mobility Command, quantified the airlift effort against the threat:

> Air Mobility Command planes and crews have done something unheard of in airlift history, Kross said: moving millions of tons and thousands of passengers under the constant threat of attack. 'The hardest hurdle has been thrusting global air mobility into a medium-threat environment — and it carried the day,' he said. 'That's never been done before, and to do it in air mode only is historic.' (Trowbridge, 2002: n pag)

A medium-threat environment includes a variety of weapons. The most lethal of those included in the category are the man portable air defense systems (MANPADS) that fire

an infrared-guided missiles, and antiaircraft artillery. Anti-coalition forces had large quantities of munitions and the desire to use them.

One final threat facing airlift assets was the basis of this whole research effort. From the initiation of air operations, the threat of mid-air collisions was moderate. Major General Richard A. Mentemeyer was the director of mobility forces for OEF from September to December 2001. He pointed out the significance of the airspace problem during an interview with the Air Mobility Warfare Center. General Mentemeyer said, "I became an air space coordinator because nobody else was doing it. I went to General [Charles F.] Wald [Commander of Air Force Forces] and said we're becoming our own biggest threat" (Mentemeyer, 2002: n pag). If our own coalition aircraft were not enough, non-participating air carriers from non-governmental and relief organizations often entered the Afghan airspace for landings, which added to the congestion. Specific details covering the characteristics of Afghanistan follows in subsequent chapters. Table 1 follows on the next page to put airlift the characteristics presented into a comparative format.

Table 1 Historical Airlift Characteristics

	Prior Air Traffic Control Infrastructure?	Self-contained instrument approaches?	Non-cooperative airspace users?	Time compressed planning?	Airlift threat faced?	Airlift instrument condition airspace allocation process?
Berlin	Yes	No	No	Yes, but infrastructure in place	Harassing fire	Yes, airlift owned
Korea	Yes, then deteriorated	No	No	Yes	AAA, Hostile	No
Vietnam	Built up over years	Evolving	No	No	AAA, Hostile	Coordination only
Desert Storm	Yes	Yes	No	No	AAA	Yes, not tested
Kosovo	Yes, civil / military both in place	Yes	No	No, forces used were familiar	MANPADS, AAA, potential Radar SAMS, unknown intent	Yes, process extremely cumbersome, combat air forces centric
Op Enduring Freedom: Afghanistan	**No, Destroyed**	**Yes**	**Yes**	**Yes**	**MANPADS AAA Hostile**	**In place, missed instrument airlift**

IV. Airspace Allocation: Doctrinal Process Description

> *The goal of combat zone airspace control is to enhance air, land, maritime, and special operations force effectiveness in accomplishing the [Joint Forces Commander's] objectives. Airspace control procedures must prevent mutual interference from all users of the airspace, facilitate air defense identification, and safely accommodate and expedite the flow of all air traffic in the theater of operations.*
>
> Doctrine for Joint Airspace Control in the Combat Zone (JP3-52, 1995:v)

As lessons are distilled from experiences, military doctrine comes about to produce basic principles for the effective use of forces. Joint and Air Force doctrine describe distinct processes for allocating airspace, delineate specific roles for participants, and assign specific tasks for controlling agencies. The purpose of this chapter is to present the doctrinal sequence of events for airspace allocation, from the use of crisis action planning through the issuance of theater airspace products such as the airspace control order (ACO) and special instructions (SPINS). The examination of doctrinal processes involved in building theater airspace is critical since airlift instrument procedures are part of the overall airspace plan. Airlift specific doctrine describes planning procedures that aid the development of the theater airlift system and its integration with other assets. This chapter includes Air Force instructions and other service specific regulatory guidance pertinent to the process. Key activities for producing theater instrument procedures are identified as the doctrine review is conducted. Doctrine and regulatory guidance evolve, but the texts reviewed were in effect on 11

September 2001, when the crisis action planning began. The effectiveness of the changes made after this date will be left to future research.

Crisis Action Planning

The U.S. military uses crisis action planning to respond to current events and time-sensitive situations. OEF was such an event. Figure 2 shows the crisis action planning process flow of events. Usually, the command assigned to the event's region accomplishes crisis action planning. U.S. Central Command covered the region of Operation Enduring Freedom. Doctrinally, in Joint Publication 5-00.2, *Joint Task Force Planning Guidance and Procedures*, it is suggested that a Joint Task Force be established

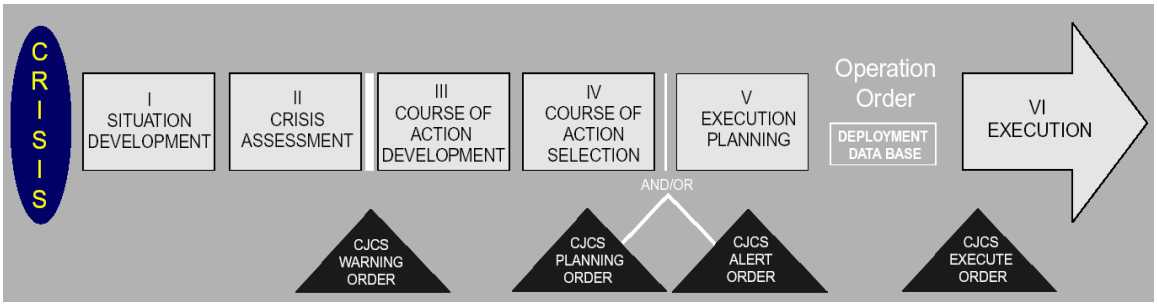

Figure 2 Crisis Action Planning Flow (JP5-00.2, 1999:IX-15)

during crisis action planning to conduct the planning for and ultimately, the execution of a military course of action. As part of the Joint Task Force, the Joint Planning Group is comprised of people with different specialties to conduct crisis action planning and develop the operation order (OPORD) (JP5-00.2, 1999:IX-7). Figure 3 illustrates the structure and composition of a standard Joint Planning Group. The command presents its

plans produced in response to the critical event as potential courses of action for the National Command Authority (NCA).

Once a specific course of action (COA) is selected, the planning process moves to the execution planning phase and nears completion with OPORD issuance. "Execution

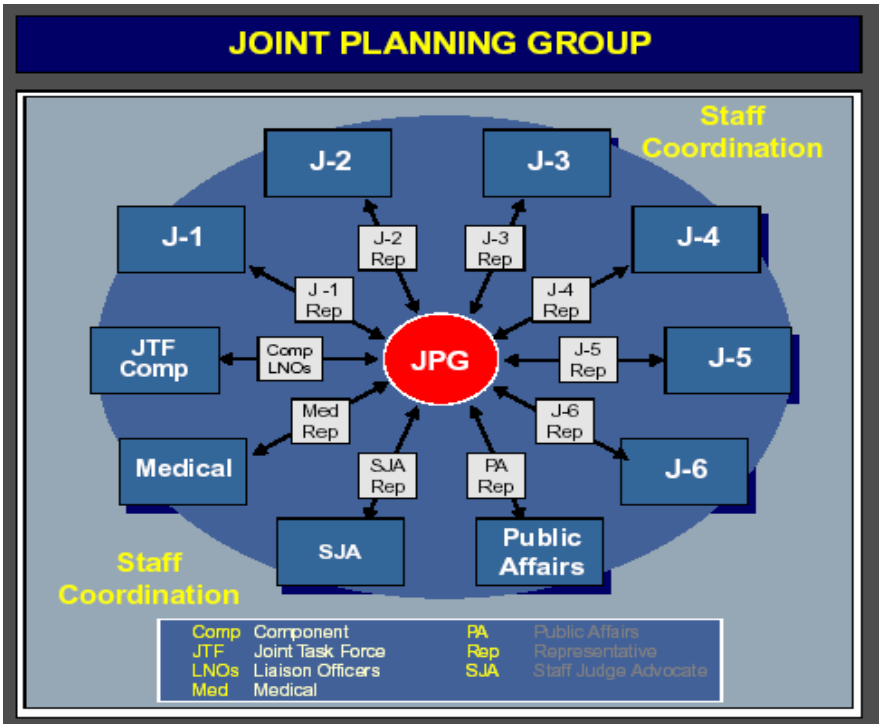

Figure 3 Joint Planning Group (JP5-00.2, 1999:IX-6)

planning is detailed planning for the commitment of specified forces and resources" (JP1-02, 2001:189). The Joint Planning and Execution Community[1] implements the approved

[1] Those headquarters, commands, and agencies involved in the training, preparation, movement, reception, employment, support, and sustainment of military forces assigned or committed to a theater of operations or objective area. It usually consists of the Joint Staff, Services, Service major commands (including the Service wholesale logistics commands), unified commands (and their certain Service component commands), subunified commands, transportation component commands, joint task forces (as applicable), Defense Logistics Agency, and other Defense agencies (e.g., Defense Intelligence Agency) as may be appropriate to a given scenario (JP1-02, 2001:285).

COA by conducting detailed planning for the OPORD. The time from COA proposal to execution can be short and requires complete coordination of forces. The OPORD provides the guidance to synchronize efforts and can vary in degree of detail. If a deliberate plan is taken mostly intact then less focus is required in the operation order. On the other hand, if no plan from the shelf covers the course of action, then the OPORD needs to be quite detailed with specific content.

Some common elements of an OPORD may allude to the ultimate use of airspace. According to Joint Publication 5-0, *Doctrine for Planning Joint Operations*, the OPORD describes the concept of operations and identifies actual forces, sustainment, and strategic mobility resources (JP5-0, 1995:III-14). These elements start to define the requirements for theater airlift. The OPORD format also delineates coordinating instructions, administration and logistics. When the OPORD identifies conventional ground forces for use to achieve objectives, logistical considerations follows. At this point, heavy interface with the airlift users helps define the role they expect air logistics forces to fulfill. Without a good, integrated effort between the supported force and the supporting airlift forces, details for the air logistics piece can go undefined.

A critical concept for integration presented in the OPORD is the definition of the command structure. It impacts airlift and user relationships. Identifying the key command relationships and task assignments leads to more organized operations and a clearer hierarchy. During crisis action planning, the Joint Forces Commander designates the Joint Forces Air Component Commander (JFACC). The OPORD may identify the need for a Director of Mobility Forces (DIRMOBFOR) and identify airlift forces for future operations. As the primary mobility coordinating authority, the DIRMOBFOR

should begin working with all potential air mobility users and those impacted by air mobility operations. When the national command authority deems the military course of action necessary, it gives the order to execute the OPORD. The rest of the command structure for the theater is filled in short order.

Theater Command Structure and Delegation of Authority

The suggested theater command structure is standardized in joint doctrine. Regional commanders use the joint task force to conduct operations within their command's area of responsibility. Figure 4 shows the doctrinal structure of the joint task

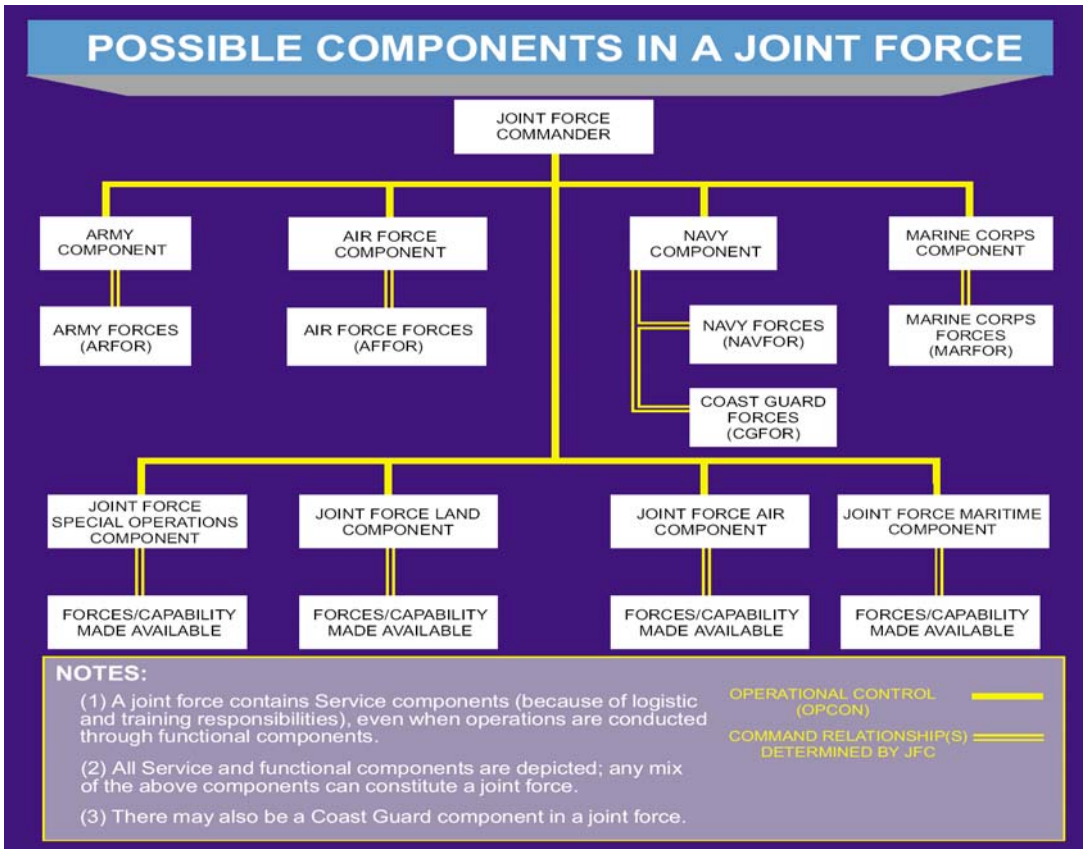

Figure 4 Joint Force Staff (JP3-0, 2001:II-18)

force. The JFACC heads the air component and is selected from the service with the preponderance of air power. The Joint Forces Commander gives the JFACC the responsibility for the air planning effort to achieve the overall objectives (JP3-56.1, 1994:II-2).

"The joint air operation plan documents the JFACC's plan for integrating and coordinating joint air operations" (JP3-56.1, 1994:III-2). Joint Publication 3-56.1, *Command and Control for Joint Air Operations*, emphasizes that the planning staff for this document should include "representation from all components providing capabilities/forces. A carefully selected staff of planners and weapon systems experts from each component enables consideration and understanding of all component capabilities/forces" (JP3-56.1, 1994:III-2). A notional Joint Air Operations Center is provided in figure 5 to show how the JFACC might organize the staff. Joint Publication 3-56.1 gives the staff five steps to guide them in preparing the plan with its associated products: operational environment research, objective determination, strategy identification, centers of gravity identification, and the joint air operations plan development. Airlift and air refueling planners are specifically identified as required participants, whose inputs and requirements must be reflected in the joint air operations plan.

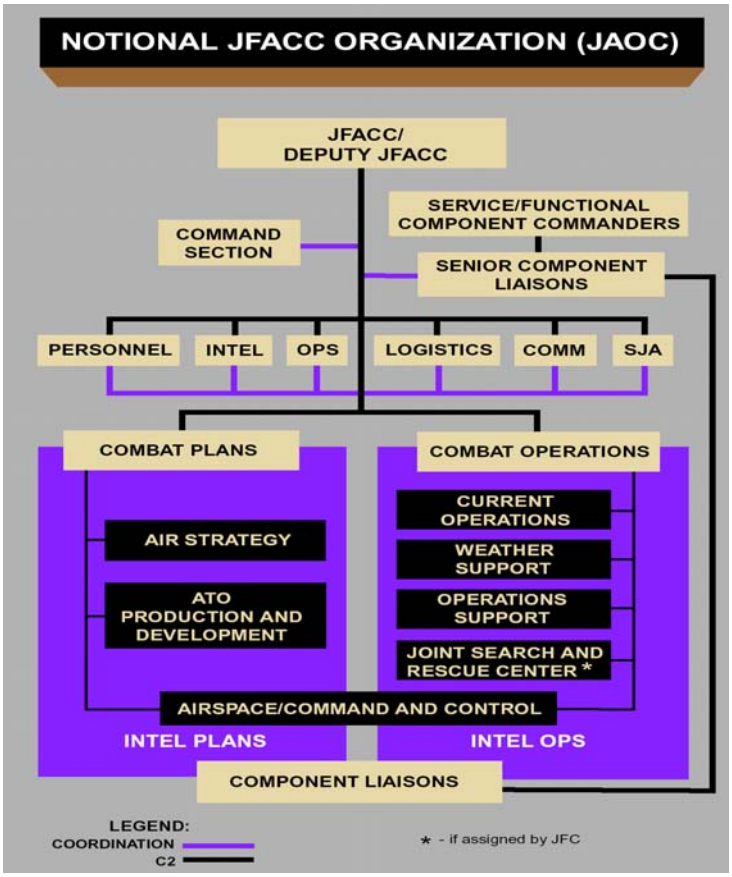

Figure 5 JFACC and JAOC Organization (JP3-56.1, 1994:II-6)

As the steward of the theater air power and the joint air operations plan, the JFACC is often delegated the responsibility of airspace control authority. Joint Publication 3-0, *Doctrine for Joint Operations*, defines airspace control authority as, "The commander designated to assume overall responsibility for the operation of the airspace control system in the airspace control area" (JP3-0, 2001:GL-4). Joint Publication 3-52, *Doctrine for Joint Airspace Control in the Combat Zone*, lists the airspace control authority's tasks:

- Coordinate and integrate the use of the airspace control area.
- Develop broad policies and procedures for airspace control and for the coordination required among units within the area of responsibility / joint operations area.

- Establish an airspace control system that is responsive to the needs of the joint force commander, provides for integration of the airspace control system with that of the host nation, and coordinates and deconflicts user requirements.
- Develop the airspace control plan and, after joint force commander approval, promulgate it throughout the area of responsibility / joint operations area.
- Provide the flexibility needed within the airspace control system to meet contingency situations that necessitate rapid employment of forces. (JP3-52, 1995:II-3)

When the airspace control authority has established the airspace control system via procedures and policies, it is called the airspace control plan (ACP) and published.

Joint Publication 3-52 lists the numerous topics required during the ACP's construction both in the main text description of the ACP and in an appendix devoted to its development. Specific to airlift instrument procedures, the publication encourages establishing, "procedures for day or night operations and for aircraft experiencing adverse weather" (JP3-52, 1995:II-6). It also suggests procedures for, "en route and terminal-area air traffic control procedures for aircraft transitioning to and from the battle area that complement planned combat requirements" (JP3-52, 1995:II-6). Further guidance from JP3-52 states, "Broad areas of concern for developing the ACP include familiarity with the basic operation plan, combined with knowledge of host-nation and multinational political constraints, capabilities and procedures of military and civil air traffic control systems, and general locations of friendly and enemy forces" (JP3-52, 1995:vii). This passage assumes an air traffic control system is present.

Air Force Doctrine Document 2-1.7, *Airspace Control in the Combat Zone*, runs parallel to Joint Publication 3-52. It is the doctrine specific to the Air Force that deals with the airspace allocation process. It assumes that the JFACC will be an Air Force

officer, which does not have to be the case, but was for OEF. The Air Force publication closely mirrors the Joint publication and adds detail. When the Air Force component commander is appointed, he is encouraged to get the airspace control and air defense forces staffs up and running rapidly, to finish off the airspace portion of the crisis action plan (AFDD2-1.7, 2001:12). The document stresses that the ACP planning effort must be synchronized with the Joint Forces Commander's planning cycle, with all organizations involved in the conflict integrated, prior to the ACP's dissemination (AFDD2-1.7, 2001:12).

When the joint air operations plan and associated ACP are finalized, they go to the Joint Forces Commander for approval. If the air campaign plan supports the JFC's objectives, he approves it. The JFACC usually presents the ACP for approval concurrently with the air campaign plan. Upon JFC acceptance, the theater implements the ACP through the airspace control order (ACO) with which all components must comply, even those not available for joint tasking (JP3-56.1, 1994:II-2). Once forces are deployed to the theater, the air operations center produces and maintains air component procedural guidance such as the ACO and SPINS.

Air Operations Center (aka AOC/Combined AOC/Joint AOC)

Air Force Doctrine Document 2-1.7 defines the airspace management role of the air operations center in the following manner:

> The AOC is the senior element of the [theater air control system]. It provides centralized planning, direction, control, and coordination of air operations. Within the AOC, the airspace management and control team coordinates and integrates the use of airspace in a combat area. The airspace management and

> control team accomplishes combat airspace planning and execution. Within the combat plans division, team members write the ACP and the ACO for the airspace control authority. The combat operations division monitors the ACO and makes immediate changes to it as the progress of the battle dictates. While it does not have a direct role in airspace control, the air mobility division provides expertise to integrate the air mobility mission into the airspace control system. It also provides information for the development of airlift corridors and aerial refueling tracks that are incorporated into the ACP and ACO. Additionally, the air mobility division disseminates ACP and ACO information to intertheater mobility assets (AFDD2-1.7, 2001:22).

Unlike AFDD2-1.7, Joint Publication 3-56.1, written earlier, makes no reference to an Air Mobility Division within the air operations center, but mentions the Air Mobility Element. Both doctrine documents define the role of the AOC similarly and point to the same AOC products for airspace issues.

Two documents regulate airspace structure, the airspace control order, which represents the airspace control plan, and the special instructions (SPINS). The combat plans and combat operations divisions collaborate to change both as necessary to fit the nature of the battle in theater. In the combat plans division, the airspace management section develops airspace control measures. Airspace control measures are procedural deconfliction methods which include, "air refueling routes, missile engagement zones, minimum risk routes, and others as appropriate, which are developed, coordinated, and published in the ACP" (JP3-56.1, 1994:C-1).

Airlift instrument procedures should be allocated airspace through the airspace management section of the combat plans division using procedural airspace control measures. If built properly, the procedures satisfy instrument flight rules procedural separation requirements. Air Force Doctrine Document 2-1.7, Appendix B, provides the following definitions of specific airspace control measures for air corridor, low-level

transit route, minimum risk route, and restricted operations area. An air corridor is a "restricted air route of travel specified for use by friendly aircraft and established to prevent engagement by friendly forces" (AFDD2-1.7, 2001:37). The air corridor is used to route traffic within the area of responsibility, to include commercial traffic and airlift, and is published in the airspace control order. A low-level transit route is a "temporary, bidirectional corridor of defined dimensions that facilitates the low-level passage of friendly aircraft through friendly air defenses and controlled or restricted airspace" (AFDD2-1.7, 2001:41-42). Minimum risk routes are temporary in nature and are of "defined dimensions recommended for use by high-speed, fixed-wing aircraft that presents the minimum known hazards to low-flying aircraft transiting the combat zone" (AFDD2-1.7, 2001:42). The minimum risk routes are established with consideration of "threats, friendly operations, known restrictions, known fire support locations and terrain" (AFDD2-1.7, 2001:42). They are to be used by aircraft crossing the forward line of friendly troops. Once in the objective area, a restricted operations area or zone can be created "in response to specific operational situations or requirements within which the operation of one or more airspace users is restricted" (AFDD2-1.7, 2001:42). The measure separates and identifies areas for such things as landing zones. Doctrinal guidance from AFDD2-1.7 states that restricted operations areas can "adversely affect air defense operations; therefore, air defense missions generally have priority" (AFDD2-1.7, 2001:42). These examples of airspace control measures illustrate some possible ways to set up instrument procedures for airlift operations. An airlift user in need of airspace just needs to request it using the suggested format included in the publication.

Airlift Specific Publication Review - Theater Instrument Procedures

Airlift doctrine and regulatory guidance contain specific information applicable to the study of the establishment of theater airlift instrument procedures. A common theme in airlift doctrine, terms of troop deployment and combat sustainment, is urgency. It emphasizes timely planning to enable rapid mobility response. Prior planning is even better. To supplement doctrine, basic Air Force Instructions cover limitations to airlift operations to provide a safety net for missions.

Airlift Doctrine

The Joint Forces Commander's campaign plan drives the use of airlift. Joint Publication 2-6, *Air Mobility Operations*, captures the level of the JFC's reliance upon effective airlift:

> Unit movements within the theater are in response to the JFC's campaign plan. Once ground combat units are deployed to a theater, the JFC may use airlift to maneuver forces. In this capacity, airlift allows the JFC to reposition forces expeditiously, achieve surprise, and control the timing and tempo of operations. However, once forces are engaged, resupply requirements increase dramatically and become more unpredictable and variable. The ability of airlift to rapidly and flexibly accommodate the critical resupply requirements of units engaged and operating in such a dynamic environment provides commanders an essential warfighting capability. (JP2-6, 1999:37)

Airlift specific doctrine goes into great detail on the planning process and its importance for successful execution. Joint Publication 3-17, *Joint Doctrine and Joint Tactics, Techniques, and Procedures for Air Mobility Operations*, suggests that due to the time constraints usually encountered in airlift operations, "detailed planning for the conduct of specific operations is performed by the participating component commands. Subordinate commands should make maximum use of existing plans" (JP3-17, 1995:IV-5). Air Force

Doctrine Document 2-6.1, *Airlift Operations*, breaks the main thrust of airlift planning concept into the following clear, digestible morsel:

> Planning airlift operations around the globe is a complicated process involving numerous considerations. These range from selecting the most appropriate airlift for an operation to ensuring airlift facilities are capable of supporting an operation. Airlift planners should be thoroughly familiar with each Service component's unique airlift capabilities as well as those of common-user airlift. They should comprehend the nature of the threat to airlift and coordinate effective threat countermeasures. Finally, the entire airlift operation requires detailed planning to include coordination of appropriate airspace control measures, communication, and command and control procedures. (AFDD2-6.1, 1993:50)

Without a doubt, the doctrine suggests that a dedicated team should be specially trained and appointed early on in the planning process to take care of the airlift portion of the campaign plan, just like other military assets.

This study specifically focuses on the procurement of airspace for airlift operations. Air Force doctrine is clear on how the process is to take place from the airlift planner's standpoint. The specific text follows from AFDD2-6.1:

> Airspace Control:
>
> The use of airlift in any theater must be integrated into the airspace control plan and any civilian or international airway control system. Airlift planners should coordinate with the airspace control authority's (ACA) staff and obtain diplomatic clearances to ensure airlift complies with all routes and procedures through any area they may transit. The nature and intensity of the air operation may require the establishment of specific airlift corridors. The corridor routing is coordinated among the JFACC, the DIRMOBFOR, the airlift control team (ALCT), and the air mobility element (AME). These individuals and organizations should take into account all other theater operations and any threats to the airlift forces. The ALCT or theater equivalent provides deconfliction of daily intratheater operations in the [joint operations area]. The AME provides the coordination of intertheater assets entering the [area of responsibility/joint operations area]. It is the responsibility of the JFACC, as the ACA, to ensure airspace management of airlift operations is sufficient to provide effective and safe operations within the [area of responsibility/joint operations area]. (AFDD2-6.1, 1993:43)

The Director of Mobility Forces is the key person for making sure proper coordination takes place. One critical DIRMOBFOR task stands out in this study. The DIRMOBFOR is to "coordinate with the AOC director to ensure all air mobility operations supporting the JFC are fully integrated into the air and space assessment, planning, and execution process and deconflicted with all other air operations" (AFDD2-6, 1999:21). In other words, the DIRMOBFOR is the primary coordination authority for theater airlift instrument airspace. It is the DIRMOBFOR's staff in the air mobility division that is required to get all the elements in place for executing airlift missions and for complying with regulatory guidance.

Air Force Instruction

When operating under instrument flight rules, Air Force aircraft are required to have "a two-way radio communication system and navigation equipment compatible with the facilities used for the airspace where the operations occur" (AFI11-202V3, 2001:14). In airspace with no navigational aids, like oceanic crossings or austere areas, specific navigational performance may be required. Both the C-130 and the C-17 are certified for basic area navigation and required navigation performance which allow for self-contained enroute navigation (AFI11-2C-17V3, 1999:87; AFI11-2C130V3, 2000:94). Since the pilot in charge is the clearance authority for flight in uncontrolled airspace, and AFI11-202V3 gives clear guidance for altitude selection off of airways, with airfield coordinates, crews can fly point to point in the weather in austere locations (AFI11-202V3, 2001:18). Established methods for not hitting other aircraft are needed.

Aircraft in-flight separation is maintained through a variety of methods. The usual method is the use of ground-based radar. The Airborne Warning and Control System can provide a measure of airspace control, but is secondary to its battle management mission (AFDD2-1.7, 2001:22). The NATO version has no airspace control capability (AFDD2-1.7, 2001:22). When radar service is absent, procedural separation takes its place. The Federal Aviation Administration in the United States and the International Civil Aviation Organization both have rules formalizing these procedures. In a contingency, separation and deconfliction of airspace control measures, like enroute air corridors, falls under the combat plans division of the air operations center (JP3-56.1, 1994:C-1).

Airfield arrivals in the weather are a little tougher in an environment void of infrastructure. While both the C-130 and C-17 are capable of executing self-contained instrument approaches in the weather, they must be approved in contingencies. Air Force Instruction 11-202V3, *General Flight Rules*, requires major commands to "publish their policy and restrictions on the use of self-contained approaches such as Airborne Radar Approaches [ARA], Self Contained Navigation Systems (SCNS), or Mission Computer Approaches, in their supplement to this instruction" (AFI11-202V3, 2001:24). Theater C-130 crews can have either the major command director of operations, or director of mobility forces, approve ARA IMC approach plates (AFI11-2C-130V3: 2000:212). For C-17 crews, "Mission computer approach procedures are intended to be used only in contingency situations when no other published approach procedure is available. Specific authorization from [major command director of operations] is required before performing these procedures in IMC" (AFI11-2C-17V3, 1999:121). Once aircraft land in

an environment requiring a self-contained approach, departing in the weather following instrument procedures is another challenge. That in-depth discussion exceeds the scope of this project.

Chapter Summary, Key Decision Points, and Decision Makers

To summarize this chapter, doctrine defines the process for establishing theater airlift instrument procedures. During crisis action planning, a joint planning group is established to develop courses of action and publish an OPORD. The OPORD contains the campaign concept of operations and key relationships. It is important to have airlift planners included in this process to get a feel for what airlift the users will need. If a previous operations plan is not available, the OPORD must be detailed, and may put the airlift plan behind. When the military course of action is selected, the joint task force executes the OPORD. The Joint Forces Air Component Commander is in charge of the Joint Forces Commander's air campaign, and as the airspace control authority, designs the airspace control plan. Airlift inputs must be included at this stage of the plan. The airspace control order implements the ACP, to which all participants must adhere. Airspace control measures submitted to the airspace management section of combat plans, in the air operations center, are included in the airspace control order. The airspace control order must include desired airlift instrument procedures. Regulatory guidance allows these procedures to be flown by airlift assets, but may require specific approval during contingency operations. The next chapter takes the doctrinal process described and examines how the flow of events in OEF compared.

V. OEF Theater Airlift Airspace Allocation Process Execution and Analysis

> *I realize that doctrine is by design authoritative but not directive; however, if we haven't read it, it is neither. In the normal circumstance, doctrine is the best way to proceed and if we must deviate, there should be a clear and compelling operational reason.*
>
> General John P. Jumper, USAF Chief of Staff
> (Jumper, 2002:n. pag.)

This chapter examines the sequence of events leading to the establishment of theater airlift instrument procedures in Operation Enduring Freedom. The purpose is to define the process used, compare it to the process defined in doctrine, and examine the challenges faced. The events are presented chronologically with supporting information included for analysis. Several key documents, the Operation Enduring Freedom Operation Order (OPORD), the initial airspace control order (ACO), and the special instructions (SPINS) have been examined but their specific content withheld due to security classification. The absence of direct reference does not impact the conclusions of this research because relevant information concerning doctrinal compliance within the documents is included.

Crisis Action Planning

Twenty-six days elapsed from the time the terrorists hit the World Trade Centers on 11 September 2001 until the first overt combat event was executed on 7 October. No off-of-the-shelf plan existed for the purpose of ridding Afghanistan of the Taliban and Al

Qaida (Public Broadcasting Service, 2004:n. pg.). The crisis action planning timeline was tight; nine days elapsed from Secretary of Defense Donald Rumsfeld's request for military options on 12 September, to the USCENTCOM Commander's plan briefing to President George W. Bush on 21 September (OEF Sig Events, 2003:n. pag.). On 2 October 2001, President Bush approved Operation Enduring Freedom, with the objective to "destroy the Taliban as a haven for terrorist networks with global reach and to eliminate the Al Qaida network itself" (OEF Sig Events, 2003:n. pag.). With such a short time to execution, planning was conducted at an accelerated pace.

Colonel Lyn D. Sherlock was the U.S. Transportation Command (USTRANSCOM) Liaison Officer to USCENTCOM for the period covering Operation Enduring Freedom and was responsible for facilitating the resolution of mobility issues during crisis action planning. When interviewed about the mobility planning process for OEF, she expressed that the relationships fostered with USCENTCOM divisions through exercises and previous planning provided good connectivity and open reception for liaison personnel (Sherlock, 2004). Although the USTRANSCOM liaison shop was normally one deep, Colonel Sherlock was augmented with experts for the OEF planning effort (Sherlock, 2004). "Expertise was brought right to CENTCOM," she stated, right to the middle of the operation.

Major General Richard A. Mentemeyer was the Director of Mobility Forces (DIRMOBFOR) for Operation Enduring Freedom from September 2001 to December 2001 (Mentemeyer, 2002). He described his appointment in his post-tour debrief given to the Air Mobility Warfare Center, "Because I had worked with [General Charles F.] Wald [the JFACC] beforehand, he just picked up the phone and said, 'Hey, Rich, come

on, we're going'" (Mentemeyer, 2002). General Mentemeyer's view of the manning situation differed from Colonel Sherlock's. He asserted that the amount of effort required of Colonel Sherlock warranted a larger, permanent team at USCENTCOM. Specifically, General Mentemeyer suggested, "They needed a team of ten deep. They needed to have several colonels" (Mentemeyer, 2002). The view from his vantage point reflected the massive amount of coordination necessary to progress through the crisis action planning cycle.

As the joint planning group developed the concept of operations and campaign plan, the Army, through the J4 Logistics Division, established the logistics requirements. During this period, mobility experts were included in the discussions (Sherlock, 2004). The mobility coordination seemed to be more focused on getting to theater versus the use of airlift in theater. General Mentemeyer reflected back on his initial trip to USCENTCOM, "There wasn't any presentation to me. It was all to Wald and I was sitting next to him as his mobility guy trying to feed in the mobility part of it. They were planning the bombing campaign. They weren't thinking deployment or anything like that because if you look back, we weren't deploying any fighter units" (Mentemeyer, 2002). Colonel Sherlock's angle differed from inside the planning cycle as General Mentemeyer was being prepared to move forward into theater. The J3, Operations Division was planning the basing structure for the theater airlift assets. Colonel Sherlock explained, "As for how the theater airlift was going to be used, the J4 had some play in that, because they were trying to make sure they had the right number of C-130s, trying to get them to the right location" (Sherlock, 2004). From a doctrinal standpoint, mobility personnel and views were included in the crisis action planning, as required. As crisis action planning

moved to execution, the OPORD produced was doctrinally compliant, relative to airlift. Determining if the amount of integration was sufficient requires other views to be examined.

Task Force Enduring Look (TFEL) was established to "accomplish Air Force wide data collection, exploitation, documentation and reporting on Air Force actions in Operations Noble Eagle, Enduring Freedom, and Iraqi Freedom (ONE/OEF/OIF), and subsequent operations in the global war on terrorism" (Phipps, 2003). TFEL compiled *Quick Look Report #9, Airfield Operations* to capture lessons learned from airfield opening during Operation Enduring Freedom. The report presents a crisis action planning omission: "The lack of a strategic planner with [airfield operations (AO)] expertise and minimal AO emphasis in deliberate and crisis action plans placed the focus on AO only on the margins and compromised flight safety" (TFEL, 2002:4). As OEF advanced, airfield operations related issues like this continued to surface.

Building and Integrating the Air Mobility Division

Within a few days of being designated the DIRMOBFOR, General Mentemeyer pushed forward and energized the Airlift Mobility Division at the CAOC in Prince Sultan Air Base, Saudi Arabia. As he built the team, an untimely problem arose. The host nation political agreement in place for Operation Southern Watch allowed only a certain total number of personnel to be in country (Mentemeyer, 2002; Bragg, 2004; DeVos, 2004). The CAOC was already manned to this level. General Mentemeyer expected to fill the core of the AMD with members of the Air Mobility Operations Squadron and Air

Mobility Operations Group. He initially had 12 people, while the rest took a long time to get into position (Mentemeyer, 2002).

As the team assembled, General Mentemeyer fostered an environment to improve airlift information flow by positioning Air Mobility Command weapons officers into the Master Air Attack Plan (MAAP) Cell of the Strategy Division. He stated, "If I want to have an influence, I can't have the guys in the AMD. If I want to influence the campaign plan and have an integrated airlift/tanker and airdrop plan, they need to be in the master campaign strategy division" (Mentemeyer, 2002). The network of weapons officers provided good levels of combat and mobility air forces integration. Mobility planners learned a significant lesson from this integration; they had to understand and adjust to the air tasking order process inside of the Air Operations Center. Everything in the theater air campaign must use this process effectively to support the JFACC in the quest to achieve the overall JFC's objectives. Once mobility planners fit into the battle rhythm, they achieved the influence General Mentemeyer desired.

Like the lack of airfield operations people identified earlier, airspace management personnel were scarce. Major Cary Bragg was the Combat Airspace Team Chief in the CAOC from 18 September to 24 December 2001. He described his predicament in this way:

> The 6 bodies I asked for, for combat airspace management, got cut down to one; that was me. The [Operation Southern Watch] airspace guy and AMD brought an airspace guy, and among the three of us, initially at least, we had to do everything. I was doing manning request for the various locations, reviewing possible instrument procedures going into those places, plus oh-by-the-way doing the combat airspace job, too. It was pretty hectic at first. (Bragg, 2004)

The lack of manning in the combat airspace shop may explain a deviation from doctrine relayed by Major Bragg. He indicated that the airspace control plan was incorporated into the special instructions and updated via the daily airspace control order (Bragg, 2004). A separate airspace control plan was not published until late in the summer of 2002. This deviation was not a major problem for theater airlift, as the pertinent information was still readily available to the deployed operations centers.

As future airlift requirements surfaced, the AMD Combat Airspace Manager integrated airspace requests with the CAOC. Captain Brock DeVos was the AMD Combat Airspace Manger from the last day of September, 2001 through February 2002. He worked closely with Major Bragg to try to secure needed airspace and make sure that the airlift airspace control measures were integrated into the daily airspace control order (DeVos, 2004). The airlift airspace control measures implemented were based on visual flight rules, required visual separation of traffic, and were aligned with theater policy (DeVos, 2004; Bragg, 2004).

The coordination challenges did not end with airspace control measure assignment. Aircraft deconfliction was a big problem, even in a visual environment. General Mentemeyer picked up a non-standard role for the DIRMOBFOR and explained, "I became the air space coordinator for a while. I became an air space coordinator because nobody else was doing it. I went to General Wald and said we're becoming our own biggest threat and I said we will have to solve this. I said I'd do it" (Mentemeyer, 2002). He went on to explain that the CAOC had enough airspace planning capacity to handle the next day's ATO, but not to look far enough ahead to build the airland operations airspace plan (Mentemeyer, 2002). Information from Major Bragg and

Captain DeVos revealed that two non-doctrinal agencies were created to aid the airlift effort, in response to task saturation.

The Air Traffic Control (ATC) cell was created to handle the terminal airspace at various fields in Afghanistan and the Regional Air Movement Control Center (RAMCC) was given responsibility for assigning airfield slot times (Bragg, 2004; DeVos, 2004; Mentemeyer, 2002). The RAMCC was tasked to "coordinate and deconflict certain aircraft movements in the region," used slot times to "meter the flow of aircraft (civil and military)," and started overcoming the lack of an enroute air traffic control system (TFEL, 2002:3). Combining scheduling with limited terminal approach control and airfield towers improved safety (TFEL, 2002:3). These two agencies relieved pressure from the airspace managers, but did not enable instrument flight operations. More challenges had to be overcome.

Theater Characteristics and Challenges

General Tommy Franks, the USCENTCOM commander, spoke of an important characteristic of the campaign, the use of phases (PBS, 2002). As the phases of the operation progressed, support for ground forces increased. The initial flow of materiel and troops from the U.S. went to staging areas to await forward deployment. Bagram airfield was opened as a forward operating base on November 30, 2001, and would require substantial airlift support.

Major Todd Pavich is a weapons officer and was selected to be a humanitarian relief operation planner on the CAOC J3 staff for OEF. He then shifted over to be a C-

130 and C-17 tactical planner until December 2001. In his experience, early in OEF, the mobility traffic was light with no "[Instrument flight rules (IFR)] requirements inside the tactical area" (Pavich, 2004). When Major Pavich's tour in the CAOC ended, another weapons officer, Captain Neil Richardson, replaced him.

Captain Richardson was present, from January to April 2002, when the airlift requirements stepped up, crowded the airspace around airfields, and increased the midair potential. He indicated that the demand for IFR procedures increased dramatically, but the theater lacked navigational aids, ATC radars, and sufficient airspace (Richardson, 2004). *Quick Look Report #9, Airfield Operations* corroborated his assessment and highlighted the lack of active duty deployable air traffic control and landing systems (DATCALS), limited airfield operations personnel assets, and the lack of a follow-on combat airspace training course (TFEL, 2002:3-5). Captain DeVos confirmed the crowding: "With major combat going on, we did not have any airspace to give to everybody so that they could have IMC capability" (DeVos, 2004).

Attempting to relieve the humanitarian strife, international governmental organizations (IGO), non-governmental organizations (NGO), and civil air carriers added a tremendous burden on the stressed airspace situation. Keeping these unanticipated aircraft separated from combat missions took time and effort. The air traffic control cell took on the task:

> So what we ended up initially doing, was taking the old airway structure as it existed, prior to hostilities, and just trying to reestablish that. The problem was, it was essentially non-radar, no positive control available. But by getting information from the IGOs/NGOs [and] being able to pass that to the various control agencies, namely AWACS, then having this route structure, we managed to provide at least a level, not perfect, but a level of safety. (Bragg, 2004)

Captain Richardson's replacement, Major Tommy Seeker, a C-130 Weapons Instructor Course Instructor, continued efforts to establish IFR procedures for airlift into the key airlift nodes.

Major Seeker revealed some other challenges to establishing instrument procedures during his tour from April to June 2002. Even with coordinated airspace, he asserted that the issues were aircraft separation, terrain clearance, and no air traffic control, procedural or otherwise (Seeker, 2004). Afghanistan, with incredibly high, rough terrain in much of the country, had no air traffic control infrastructure. The non-coalition air activity made aircraft separation nearly impossible. These issues coupled with one of the discriminating characteristics of OEF, an unpredictable, credible threat, required time to resolve.

Major Ben Akins relieved Major Seeker and dealt with two more challenges, terminal instrument procedure approval and flight check. As OEF progressed, the flow of materiel and personnel brought the needed ATC equipment. Once radars were positioned and procedures written for airlift instrument operations, the final steps were to have the procedures approved by terminal instrument procedure specialists, then flight checked. The terrain and potential threat slowed these processes to a crawl (Akins, 2004). Further, self-contained approaches, such as the airborne radar approach in the C-130 and the mission computer approach in the C-17 were not approved for instrument flight condition use due to the lack of enroute aircraft separation (McCullough, 2003).

Analysis

Some variance existed in the assessment of mobility planner manning levels during OEF crisis action planning. Most of the coordination during planning reflected the deployment emphasis of the phase, rather than the employment portion. The logistics laydown plan for Afghanistan was developed with mobility planners in the cell. The extent of the airlift personnel involvement with the ground force planners was unclear. It was clear that previous relationships and good access to leaders aided mobility liaison officers' integration efforts during crisis action planning. In regards to establishing theater airlift instrument procedures, the crisis action planning stage of OEF aligned fairly well with doctrine. Time constraints pushed the specific, detailed execution planning to a later period.

Airfield operations personnel, absent from the crisis action planning process and doctrine, may have reduced delays in obtaining deployable navigational aids, radars, and air traffic controllers. Other staffing limitations, such as a light Combat Airspace Team and total number of CAOC personnel allowed, created an environment where task saturation was likely. The non-doctrinal Air Traffic Control Cell and Regional Air Movement Control Center helped offload some airspace management pressure by metering the flow of aircraft into airfields, but added no instrument condition capability. Until airlift planners learned to align their efforts with the CAOC air tasking order cycle, air mobility efforts to obtain airspace were less effective.

As one problem was solved in trying to establish instrument procedures, another would stand in its place. With no air traffic control facilities in Afghanistan, congested

airspace required the continued use of visual aircraft separation. Combat operations took up large amounts of airspace, so no airspace was allocated for airlift IMC operations. A credible threat, an increased flow of unpredictable IGO and NGO aircraft, undulating high terrain, challenging flight checks, and lengthy terminal approach procedures reviews delayed instrument procedure implementation in turn.

VI. Conclusions

> *Thinking about airlift means thinking about combat. It may also include thinking about diplomatic missions, channel missions, peacetime contractual management, passenger service for dependents, humanitarian missions, or special assignment airlift missions. But ultimately it means combat. Any activity that does not contribute to that philosophy, any attitude that does not reflect a preparation for the combat airlift mission, any doctrine that does not serve that end is suspect and dangerous. The mission of airlift is combat airlift . . .*
>
> Charles E. Miller in Airlift Doctrine

Over the course of history, airlifters have made great sacrifices by in the pursuit of effective support for the warfighter. Turning back at the border because of weather was not a desired procedure. It is not an acceptable situation over the long term. The focus of this research was to find out why airlift instrument procedures were not in place for the key airlift nodes in Afghanistan. The explanation starts with theater airlift operations that differed in Operation Enduring Freedom from previous efforts. Aircrews faced an unpredictable, credible threat as they operated in a mountainous environment devoid of air traffic control infrastructure. No clear lines of troops and non-coalition aircraft in the region added to the confusion. The differences from other operations made this case study worthwhile.

The doctrinal process of airspace allocation established a decent platform from which to launch a quest for theater airlift instrument procedures. It puts some of the right people in the right locations. It clarifies relationships and points to processes. Doctrine does not cover the effort required to secure airspace in an

incredibly crowded theater, especially when priorities conflict, nor does it explain how to align the airlift planning cycle with the theater air tasking order cycle.

Some problems and challenges, such as deploying an air traffic control infrastructure, getting instrument procedures reviewed, and completing flight checks take time to resolve. In Operation Enduring Freedom, these issues were handled as they came up. Previous deliberate planning may have caught some of the issues, but the pacing of the U.S. response did not allow for it in this operation. Any problem requiring time to solve pushed establishing instrument procedures later down the timeline. The next operation might not allow the luxury of a casual response either.

Recommendations

In any operation using ground forces, there will likely be a need for air mobility to support the effort. As soon as possible in the planning cycle, a robust mobility planning team, including airfield operations personnel and well-trained mobility air force subject matter experts, needs to be convened to identify and solve short and long term issues. The team need not be a permanent attachment to a combatant command, but it must be exercised effectively. It would fit inside the Expeditionary Mobility Task Force structure quite well. An air mobility liaison officer, in addition to the TRANSCOM one, should be included in the Standing Joint Task Force Headquarters of the combatant commands. The person's task is to facilitate the exchange of information and maintain the fidelity of the supported commander's vision. This interaction will ultimately facilitate better integration of the Air Mobility Division into the renamed, Aerospace Operations Center.

Some benefits of better integration include more clearly understood airlift airspace requirements, aligned operations planning cycles, and more realistic planning assumptions. Better integrated planning is a portion of the battle, but in an environment lacking an air traffic control infrastructure, a method of separating aircraft is needed.

In order to support future operations of this kind, the Air Force must have way to keep aircraft from running into each other while enroute to a terminal area. Deployable equipment or aircraft internal methods could both resolve the issue. The Traffic Collision Avoidance System is a good beginning to the solution, but the limited number of compliant aircraft reduces its effectiveness. The Global Air Traffic Management system boosts navigation and separation efforts. One key element, whatever is selected, needs to be that military airpower is sometimes massed for effect, whereas civil air traffic control strives to separate and create a flow.

Areas for Further Research

Several topics related to this research can advance theater airlift instrument operations. A feasibility study needs to be done to quantify the potential gains from putting a mobility expert in the Standing Joint Task Force Headquarters of the combatant commands. The study should examine the facilitation of tactical airlift force integration and the prevention of mobility issue oversight.

Airlift has been used heavily in Operation Iraqi Freedom. A two-case study of instrument procedures in developing theater operations plans for Bagram and Tallil or Bagdad, would reveal what lessons from Afghanistan were applied in Iraq. Numerous

airfields were opened for use in Iraq. Air Mobility Command has been given the responsibility for base opening operations. A better definition of how the airspace allocation process flows into the airfield opening process must be done to enable the new mission. If the need for ground based air traffic control at forced entry airfields is reduced or eliminated by using new navigation technology, then a smaller footprint is required. A prioritized minimum aircraft equipment list needs to be built to support this venture. Finally, a study of civil and military airlift aviation integration during humanitarian operations in an area of little to no air traffic control is a timely subject.

List of Acronyms

ACP	Airspace Control Plan
AF	Air Force
AFDD	Air Force Doctrine Document
AFI	Air Force Instruction
AMC	Air Mobility Command
AMC/DOK	Air Mobility Command Directorate of Operations, Tactics
AMD	Air Mobility Division
AOC, CAOC, JAOC	Air Operations Center, Coalition AOC, Joint AOC
ARA	Airborne Radar Approach
ATC	Air Traffic Control
COA	Course of Action
DIRMOBFOR	Director of Mobility Forces
DO	Director of Operations
GCA	Ground Controlled Approach
GWAPS	Gulf War Air Power Study
GWOT	Global War on Terrorism
IFR	Instrument Flight Rules
IGO	International Governmental Agency
IMC	Instrument Meteorological Conditions
JCS	Joint Chiefs of Staff
JFACC	Joint Force Air Component Commander
JFC	Joint Forces Commander
JP	Joint Publication
JTF	Joint Task Force
NCA	National Command Authority (President and Sec Defense)
NGO	Non-governmental Agency
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OPORD	Operation Order
TFEL	Task Force Enduring Look
USCENTCOM	United States Central Command
USTRANSCOM	United States Transportation Command
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

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14. ABSTRACT

This research answers the question, "Why weren't airlift instrument meteorological condition (IMC) procedures for key airlift nodes, Bagram and Khandahar, Afghanistan, established from the inception of Operation Enduring Freedom (OEF)?" It is a case study that uses historical data from a variety of sources, including interviews of key participants, and covers the time from crisis action planning just after 11 September 2001, until airlift instrument procedures for Afghanistan were approved in 2002. A doctrinal examination relative to establishing instrument procedures identifies potential gaps, and provides insight into the process used. At first, combat operations took up large amounts of airspace, so no airspace was allocated for airlift IMC operations. Next, with no air traffic control facilities in Afghanistan, congested airspace required the continued use of visual aircraft separation. Finally, a credible threat, an increased flow of unpredictable IGO and NGO aircraft , undulating high terrain, challenging flight checks, and lengthy terminal approach procedures reviews all delayed instrument procedure implementation. The paper concludes with suggestions to improve future airlift operations.

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